

A NEW SPECIES OF *PROCESSA* FROM BERMUDA (CRUSTACEA: DECAPODA: CARIDEA)

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Abstract.—*Processa famelica*, the tenth western Atlantic species of *Processa* to be recognized and the third species to be named from Bermuda, is described from material collected at Hungry Bay, Bermuda. It can be distinguished from all American congeners by its elongate rostrum, which extends beyond the eye.

Two species of *Processa* have been described from localities in Bermuda, and, until now, these were the only two species known to occur there. *Processa bermudensis* (Rankin, 1900) was described from material collected in Harrington Sound and was re-described from Bermudan material by Gurney (1936:624). It subsequently has been recorded from localities between North Carolina and Brazil (Manning & Chace 1971, Christoffersen 1979, Williams 1984). *Processa wheeleri* Lebour, 1941, still known only from the type material, was described from material taken while night dredging in Ferry Reach.

The species described below was collected in Hungry Bay in 1979 and 1980 during visits to Bermuda to study Bermudan cave shrimps, a project sponsored by the Smithsonian under its Scholarly Studies Program.

All specimens are deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM). The abbreviation cl is used for postorbital carapace length.

Processa famelica, new species

Figs. 1-3

Material.—Hungry Bay, Bermuda [32°17'N, 64°46'W]: 1 ♂, cl 5.0 mm (holotype, USNM 252202), 16 Nov 1979, leg. R. B. Manning.—1 ♂, cl 4.8 mm, 2 ovigerous ♀, cl 5.8-7.0 mm (paratypes, USNM 252226), 13 May 1980, leg. R. B. Manning and C. W. Hart, Jr.

Diagnosis.—Rostrum extending beyond eyes. Antennal spine present. Stylocerite unarmed. Second pereopods asymmetrical: larger right with 15-18 meral and 26-30 carpal articles, smaller left with 5-6 meral and 13-15 carpal articles. Carpus of fifth leg slightly longer than propodus. Abdominal sternites unarmed. Fifth abdominal somite unarmed posterolaterally. Lobe on sixth abdominal somite above articulation of uropod unarmed.

Description.—Rostrum deflexed, extending beyond anterior edge of eye; apex bifid, lower tooth larger. Lower orbital angle low, rounded. Antennal spine present. Lower anterior angle of carapace broadly rounded.

Abdomen smooth. Fifth abdominal somite rounded posterolaterally. Sixth abdominal somite about as long as fifth, bluntly angled posterolaterally; lateral plate of sixth abdominal somite unarmed.

Telson about 1.5 times longer than sixth abdominal somite, length about 3 times greatest width, with 2 pairs of dorsal and 2 pairs of distal spines; anterior pair of dorsal spines set in anterior fourth, posterior pair beyond midlength; distance between anterior margin and anterior pair of dorsal spines about $\frac{1}{3}$ distance between pairs of dorsal spines; inner of distal spines stronger; apex of telson acutely pointed.

Eye moderately large, cornea width subequal to length of stalk and cornea combined, slightly more than 2 times greatest width of antennal scale.

Antennular peduncle extending beyond

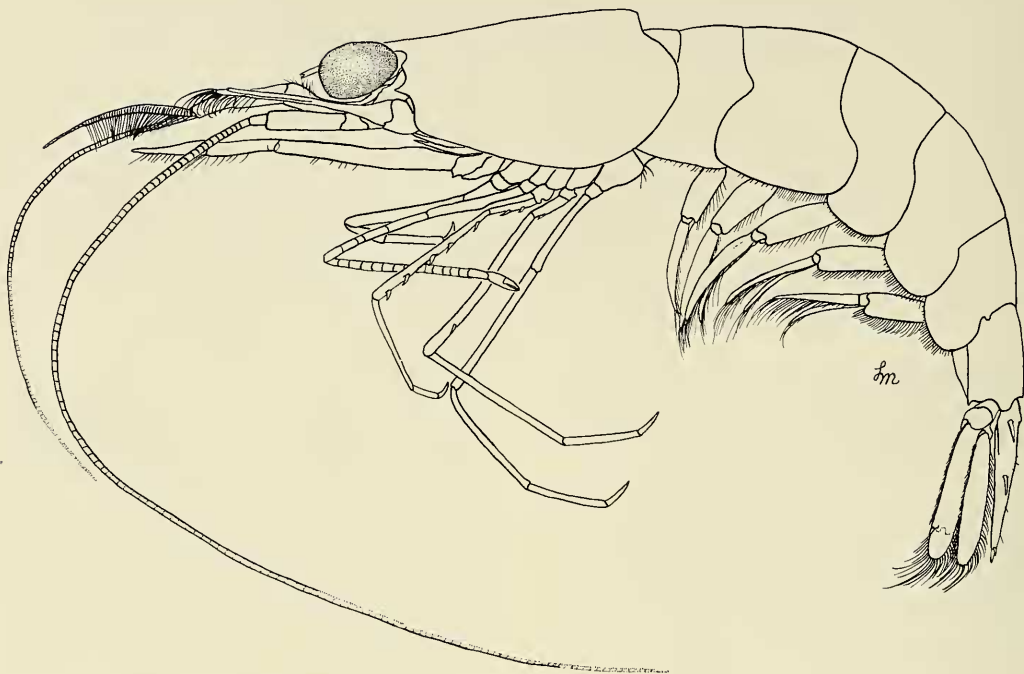


Fig. 1. *Processa famelica*, new species, male, cl 5.0 mm, lateral view.

rostrum by distal 2 segments and about $\frac{1}{4}$ of proximal segment, latter slightly longer than distal segments combined; ultimate segment more than half as long as penultimate segment; proximal segment with ventral spine, set slightly beyond midlength. Stylocerite obtusely rounded laterally, unarmed, inner margin extending further anteriorly than outer. Dorsolateral flagellum of antennule about half as long as carapace; ventromesial flagellum about twice as long as carapace.

Antennal scale extending to or almost to end of antennular peduncle, length of scale about 5 times greatest breadth; broad distal spine of scale not overreaching blade. Antennal peduncle extending about to middle of second segment of antennular peduncle. Basal segment of antenna lacking ventrolateral spine. Antennal flagellum about 4 times as long as carapace.

Third maxilliped overreaching antennal scale by half of distal segment; ultimate seg-

ment about as long as penultimate, apex acute; exopod well developed. Other mouthparts as figured by Manning & Chace (1971) for species of *Processa*.

First pereopods not extending to end of antennal scale. Right first pereopod chelate; fingers about $\frac{2}{3}$ length of palm; carpus shorter than palm; merus longer than carpus and chela combined. Left first pereopod with simple dactyl, about $\frac{1}{3}$ as long as propodus; carpus about $\frac{3}{4}$ as long as propodus; merus as long as distal segments combined.

Second pereopods unequal, right longer, overreaching antennal scale with chela, merocarpal articulation not extending to end of scale; ischium with 3–5 indistinct, merus with 15–18, and carpus with 26–30 articles; fingers more than half as long as palm; carpus about 5 times as long as chela, merus 3 times as long as chela; ischium subequal to merus. Left second pereopod overreaching antennal scale with part of carpus and all of chela, merocarpal articulation not extend-

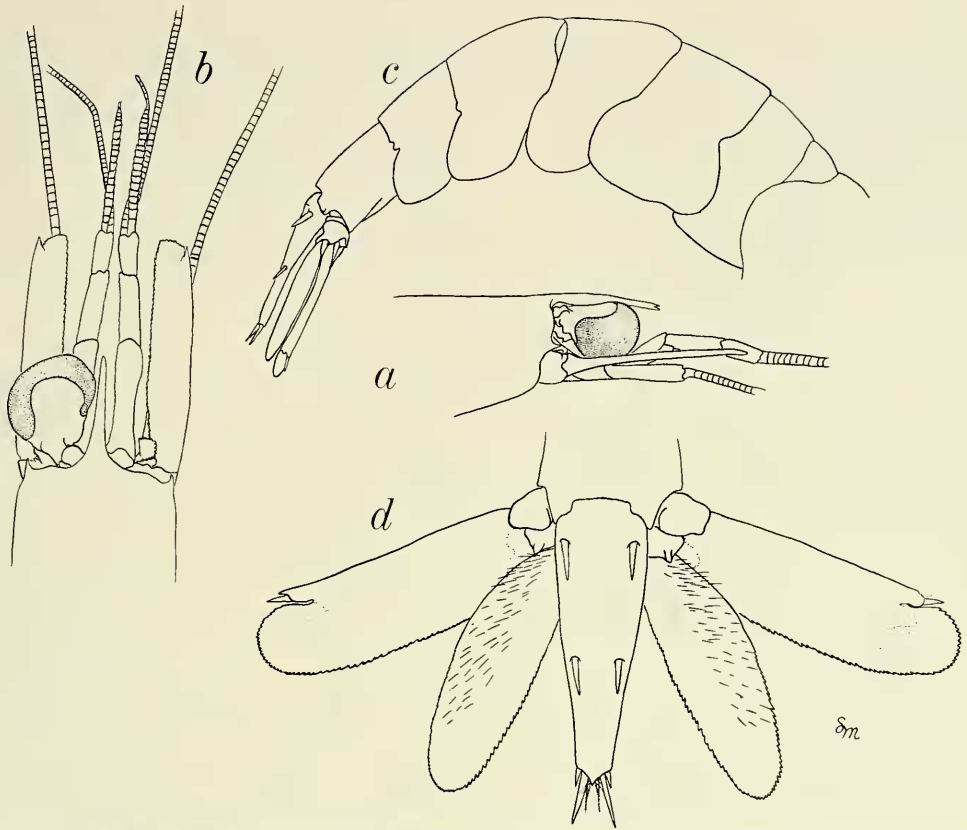


Fig. 2. *Processa famelica*, new species, male, cl 5.0 mm: a, front, lateral view; b, front, dorsal view; c, abdomen and telson, lateral view; d, tail fan, dorsal view.

ing to cornea; ischium undivided, merus with 5–6 and carpus with 13–15 articles; fingers shorter than palm; carpus slightly more than 4 times as long as chela; merus 3 times as long as chela; ischium about as long as merus.

Third pereopod overreaching antennal scale with part of carpus and all of propodus and dactyl; dactyl slender, simple; propodus about 3 times as long as dactyl, unarmed; carpus slightly more than twice as long as propodus, unarmed; merus about twice as long as propodus, about as long as carpus, with 5 movable spines on outer surface; ischium about $\frac{2}{3}$ as long as merus, with 2 movable spines; combined length of propodus and carpus of third leg slightly less than length of ischium and merus.

Fourth pereopod overreaching antennal scale with distal end of propodus and dactyl; dactyl slender, simple; propodus 2.5 times as long as dactyl, unarmed; carpus more than twice as long as propodus, unarmed; merus twice as long as propodus, with 5 movable spines on outer surface; ischium less than half as long as merus, with 2 movable spines; combined length of carpus and propodus of fourth leg subequal to combined length of ischium and merus.

Fifth pereopod overreaching antennal scale with propodus and dactyl; dactyl slender, simple; propodus about 2.5 times as long as dactyl, unarmed; carpus about 1.5 times as long as propodus, unarmed; merus slightly longer than propodus, unarmed; ischium less than half as long as merus, un-

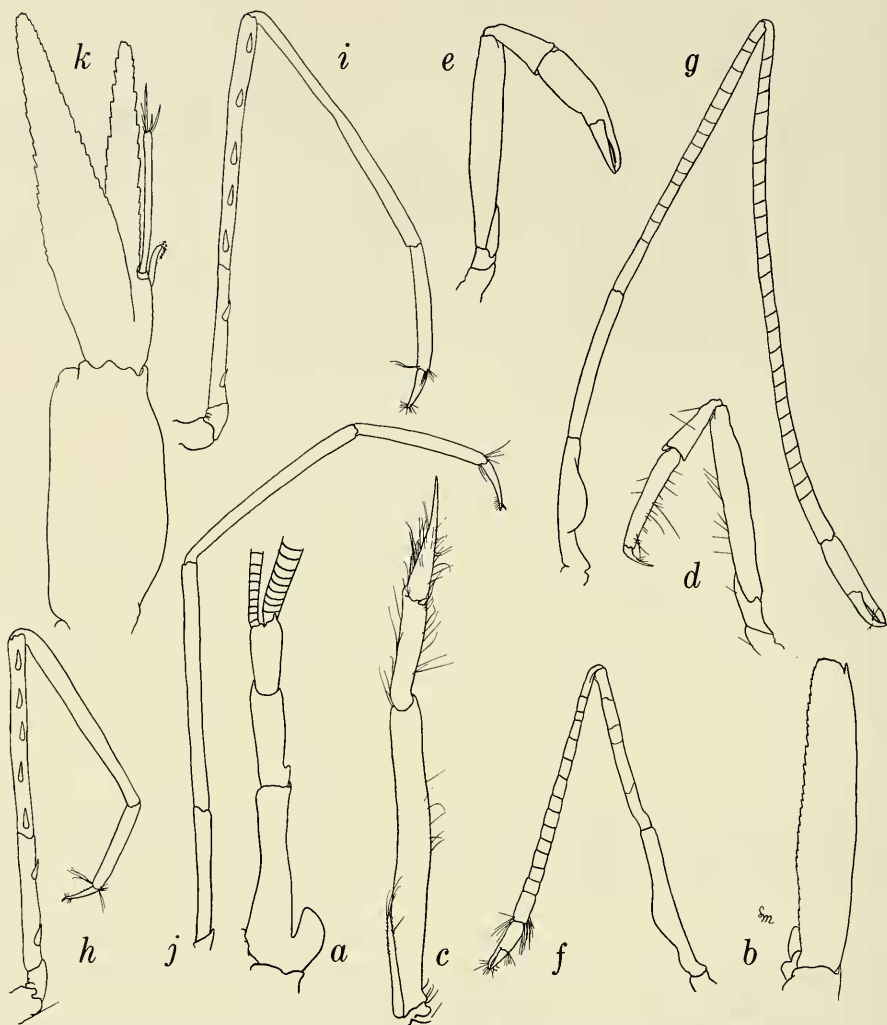


Fig. 3. *Processa famelica* new species, male, cl 5.0 mm: a, antennular peduncle; b, antennal scale; c, third maxilliped; d, left first pereopod; e, right first pereopod; f, left second pereopod; g, right second pereopod; h, left third pereopod; i, left fourth pereopod; j, left fifth pereopod; k, left second pleopod.

armed; combined length of propodus and carpus of fifth leg slightly less than combined length of ischium and merus.

Abdominal sternites unarmed.

Outer margin of uropodal exopod terminating in triangular spine, with longer, slenderer mesial spine; suture distinct. Endopod surface sparsely setose.

Ova small and numerous, eyed ova 0.4–0.6 mm in diameter.

Size.—Carapace lengths of males 4.8 and 5.0 mm, of ovigerous females 5.8 and 7.0 mm.

Name.—The specific name is from the Latin, *famelicus*, hungry, alluding to its occurrence in Hungry Bay.

Remarks.—*Processa famelica* is unique among western Atlantic species in having a rostrum that extends beyond the eyes. Although similar to *P. bermudensis* and *P.*

wheeleri, this new species differs from the former in having an internal spine and from the latter in having the stylocerite unarmed.

Processa famelica resembles the eastern Atlantic *P. elegantula* Nouvel & Holthuis, 1957 in having the long rostrum extending beyond the eyes but in that species the stylocerite is armed with a strong outer spine and the outer spine of the antennal scale overreaches the blade.

This new species was collected during the day on clean sand in shallow water, depth less than 0.5 meter, while sampling burrow openings of infaunal organisms with a yabby pump (Manning 1975). It was not taken together with any other species, but it is likely that it, like the species of *Ambidexter* reported by Abele (1972) and Williamson (1980), lives in the burrow of another invertebrate, either an annelid worm or a calianassid shrimp.

Based on her work with larvae, Lebour (1941:302) remarked that "There must be at least three, and probably four, species of *Processa* in Bermudan waters," suggesting that another species might exist there.

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